

# KIC 007046035

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007046035-01	OBS	4424.01	2.271642	131.824683	76.9	4.151	10.4	10.9	1.06	6274	1.06	1270.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007046035-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

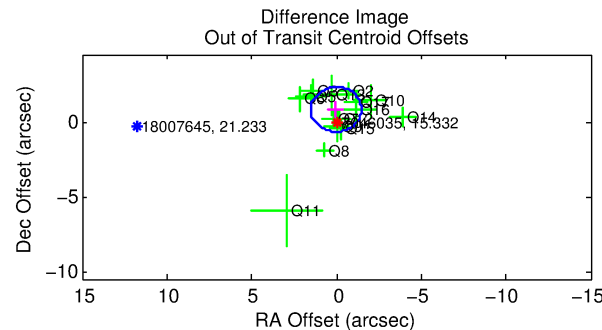
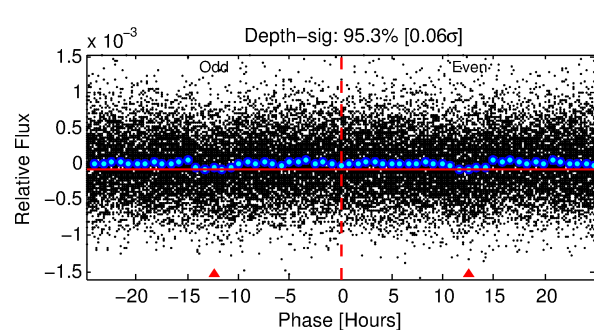
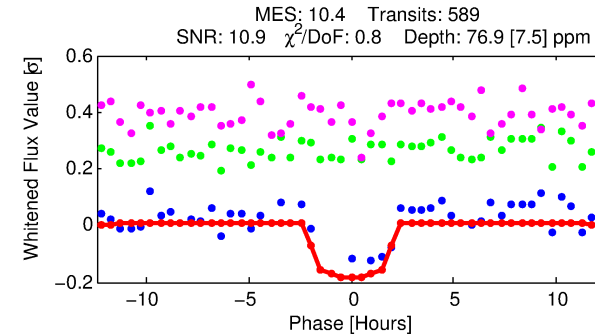
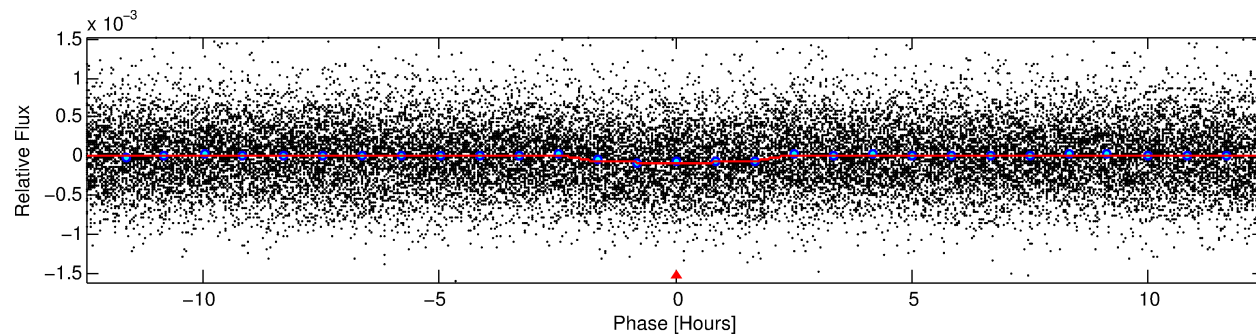
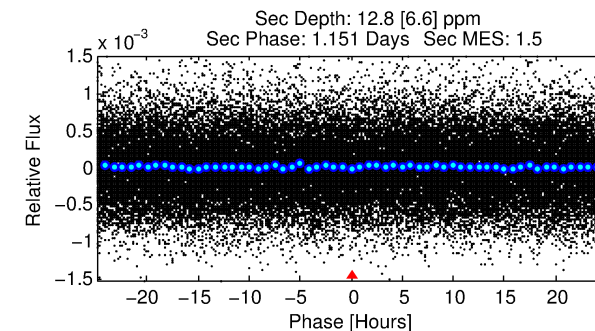
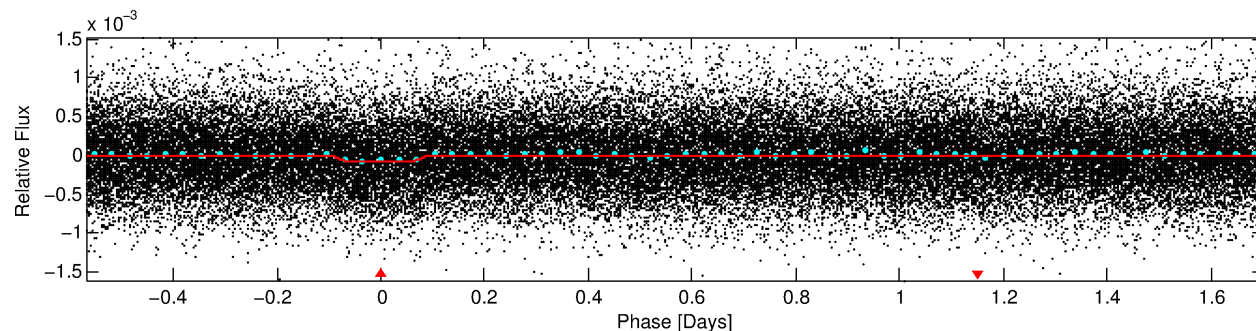
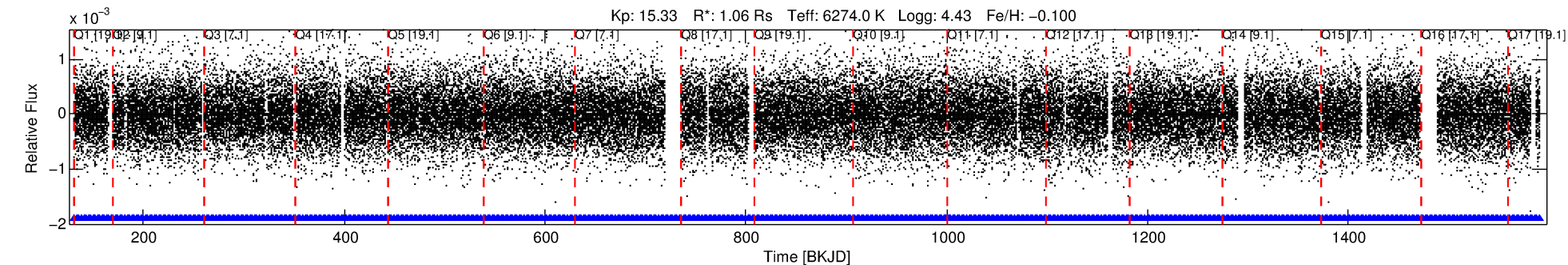
## Ephemeris Match Information For 007046035-01

No Significant Match Found

# DV One-Page Summary

KIC: 7046035 Candidate: 1 of 1 Period: 2.272 d

KOI: K04424.01 Corr: 0.985



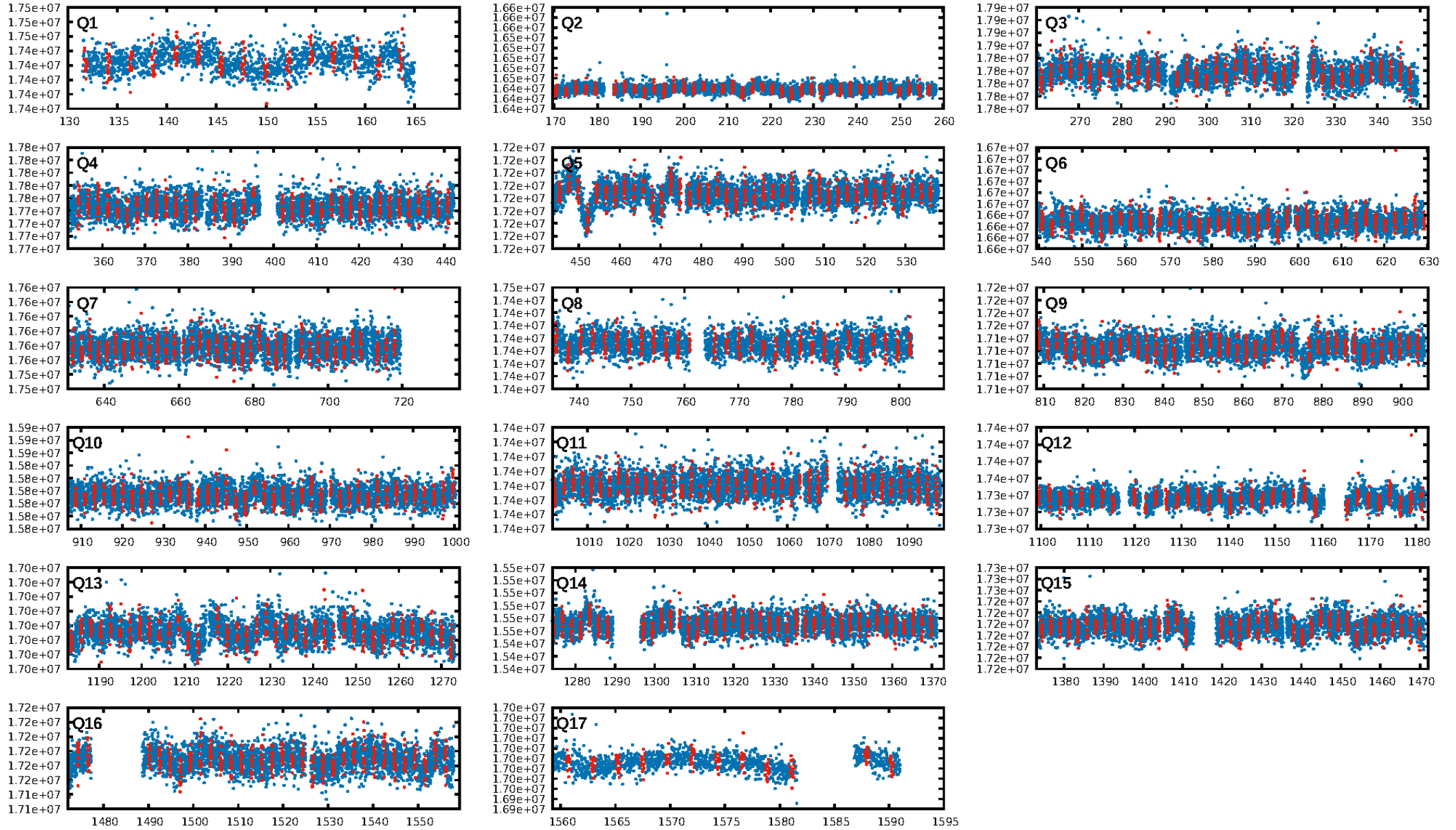
## DV Fit Results:

Period = 2.27164 [0.00002] d  
Epoch = 131.8247 [0.0050] BKJD  
Rp/R\* = 0.0092 [0.0049]  
a/R\* = 2.38 [5.68]  
b = 0.86 [0.88]  
Seff = 1270.68 [558.24]  
Teff = 1522 [167] K  
Rp = 1.06 [0.68] Re  
a = 0.0351 [0.0100] AU  
Ag = 7.69 [9.72] [0.69σ]  
Teffp = 3920 [1180] K [2.01σ]

## DV Diagnostic Results:

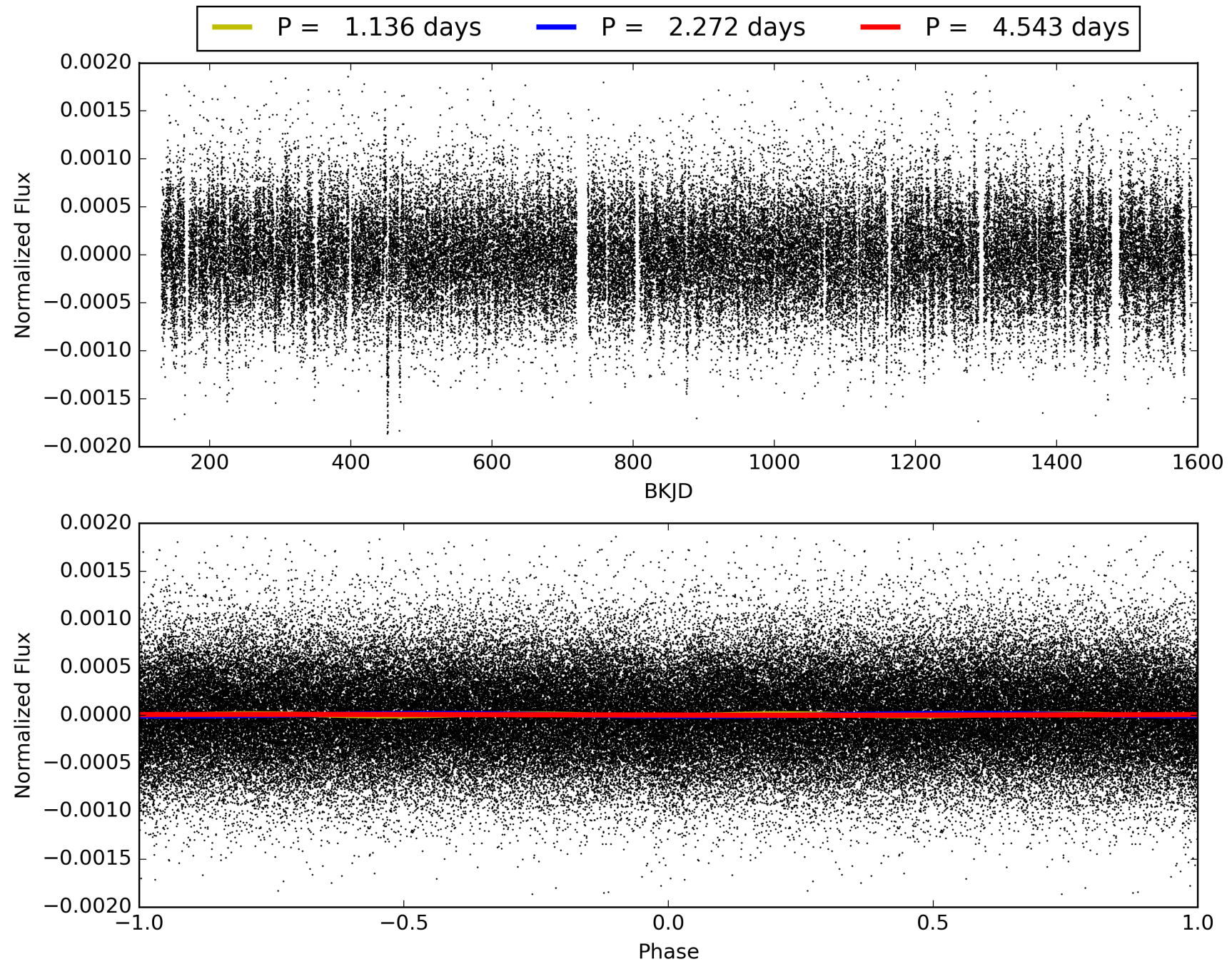
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.30e-24  
RollingBand-fgt: 1.00 [562/562]  
GhostDiagnostic-chr: 2.2  
Centroid-sig: 61.9%  
Centroid-so: 0.732 arcsec [0.58σ]  
OotOffset-rm: 0.829 arcsec [1.67σ]  
KicOffset-rm: 0.827 arcsec [1.64σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.60 [9/15]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007046035-01, PDC Light Curves



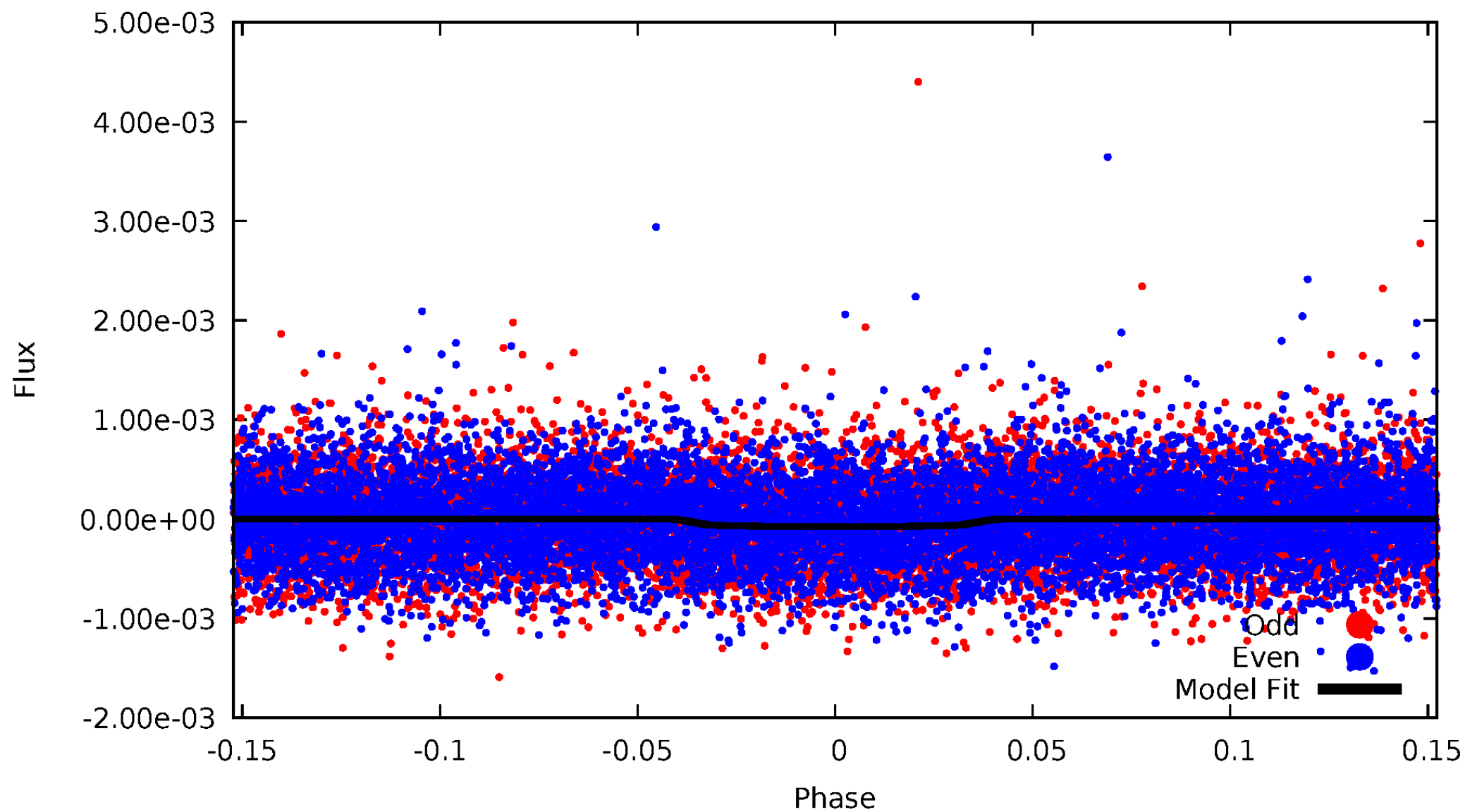


TCE 007046035-01



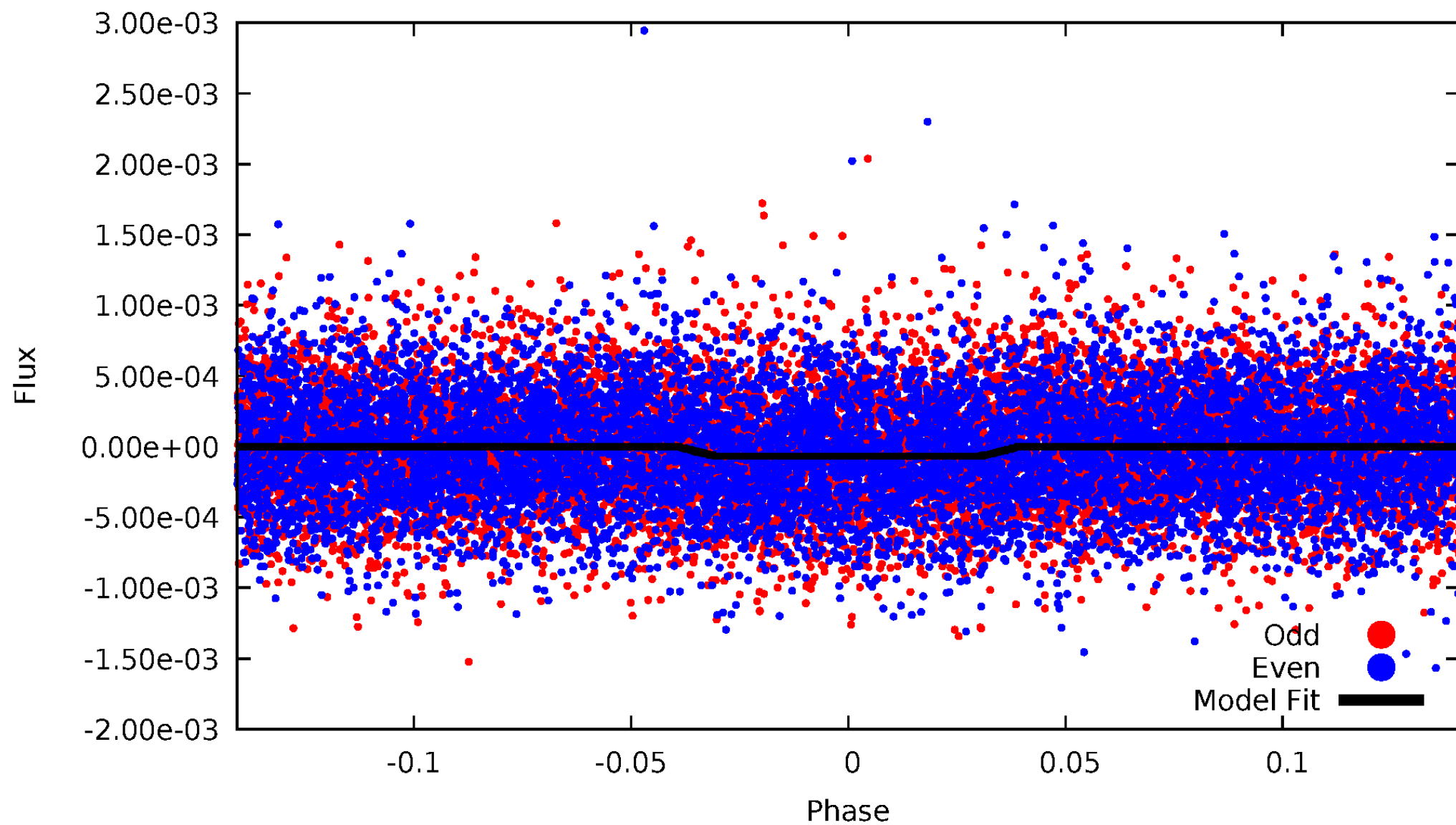
# DV Odd/Even

TCE 007046035-01



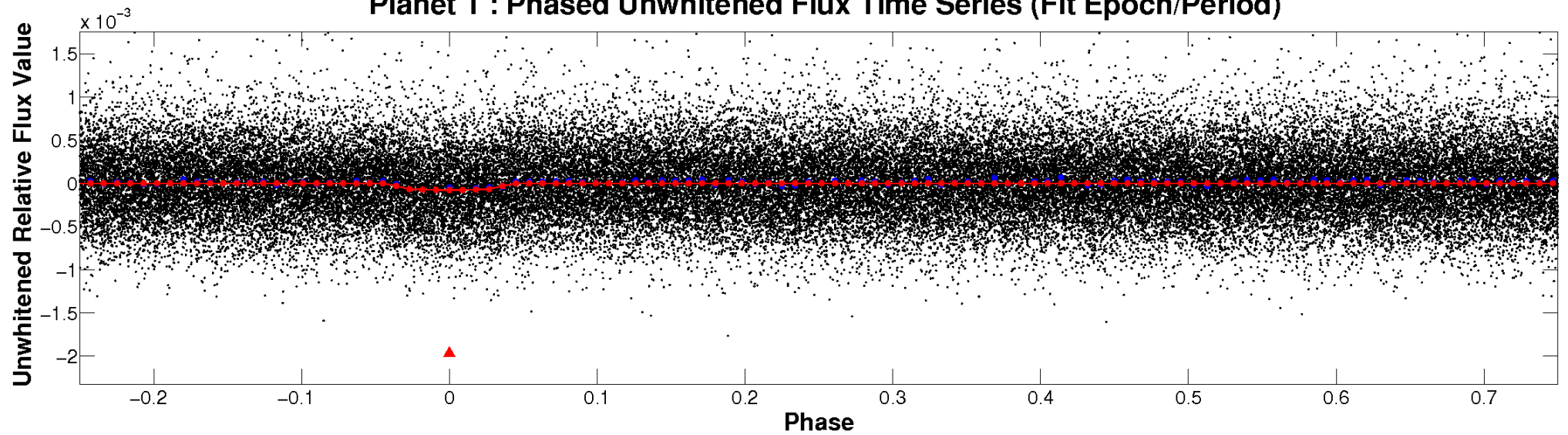
# ALT Odd/Even

TCE 007046035-01

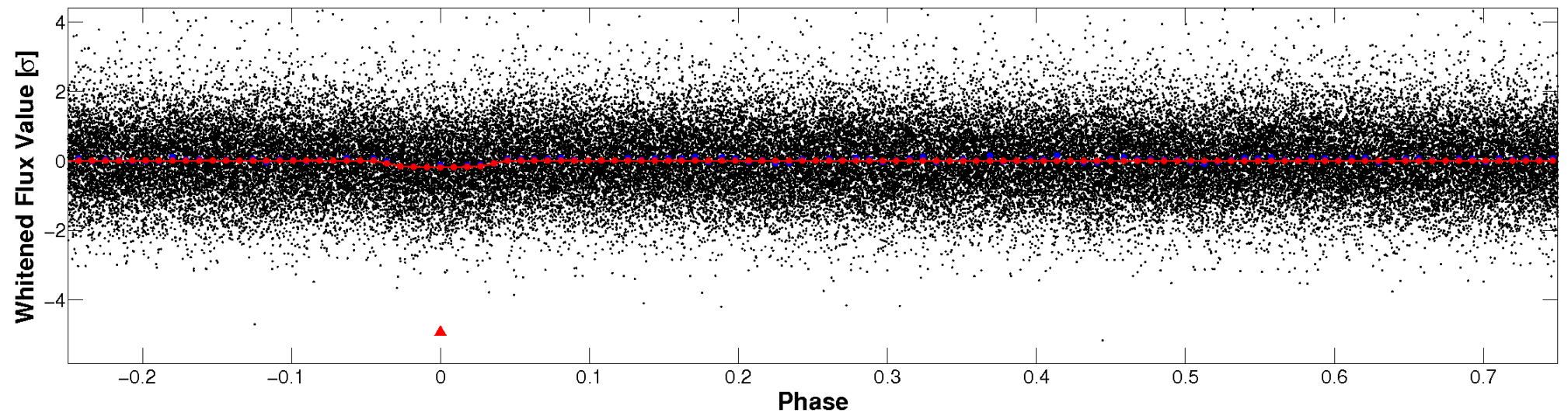


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**



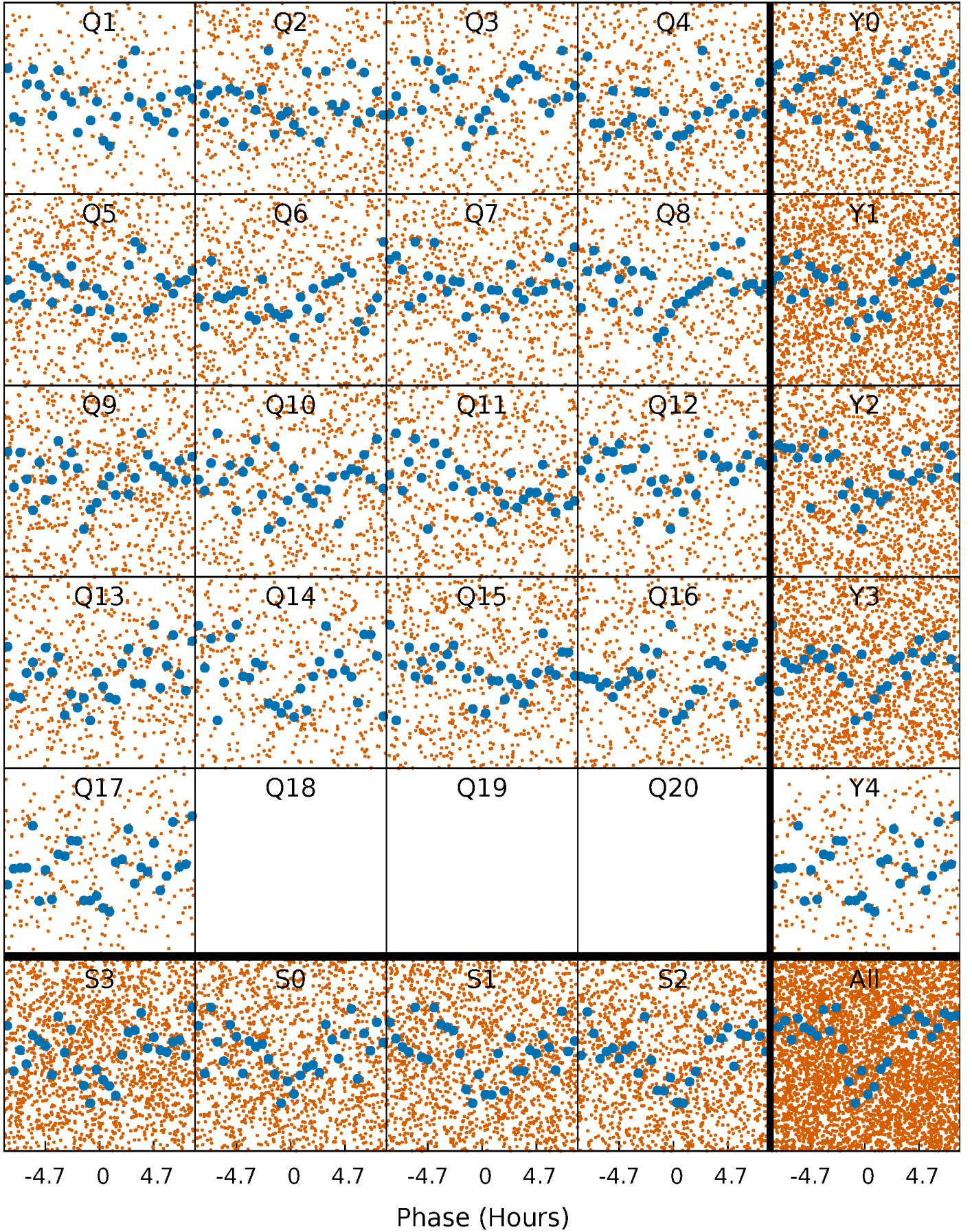
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

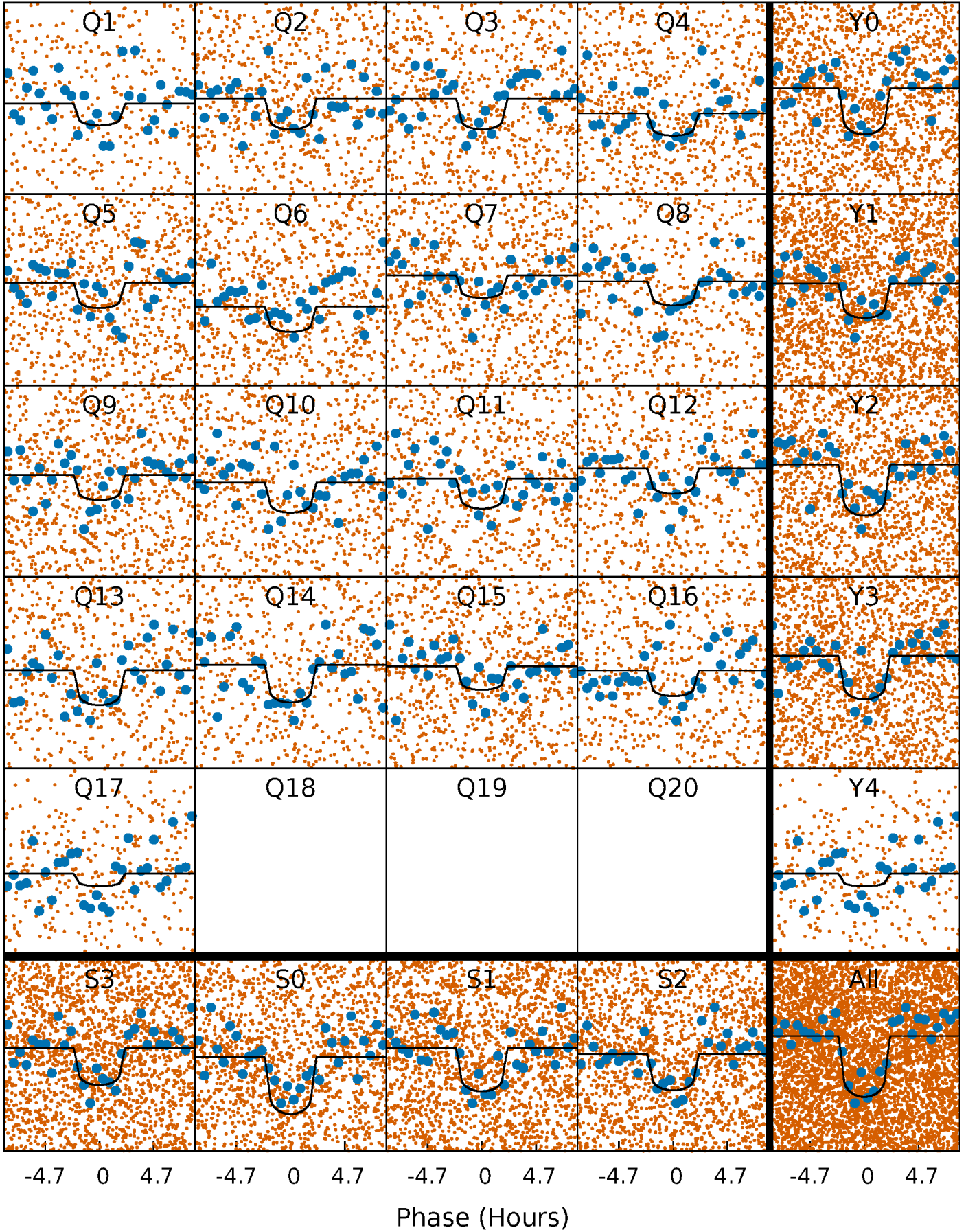
TCE 007046035-01 P= 2.271642 Days  $T_0=131.824683$  (BKJD)





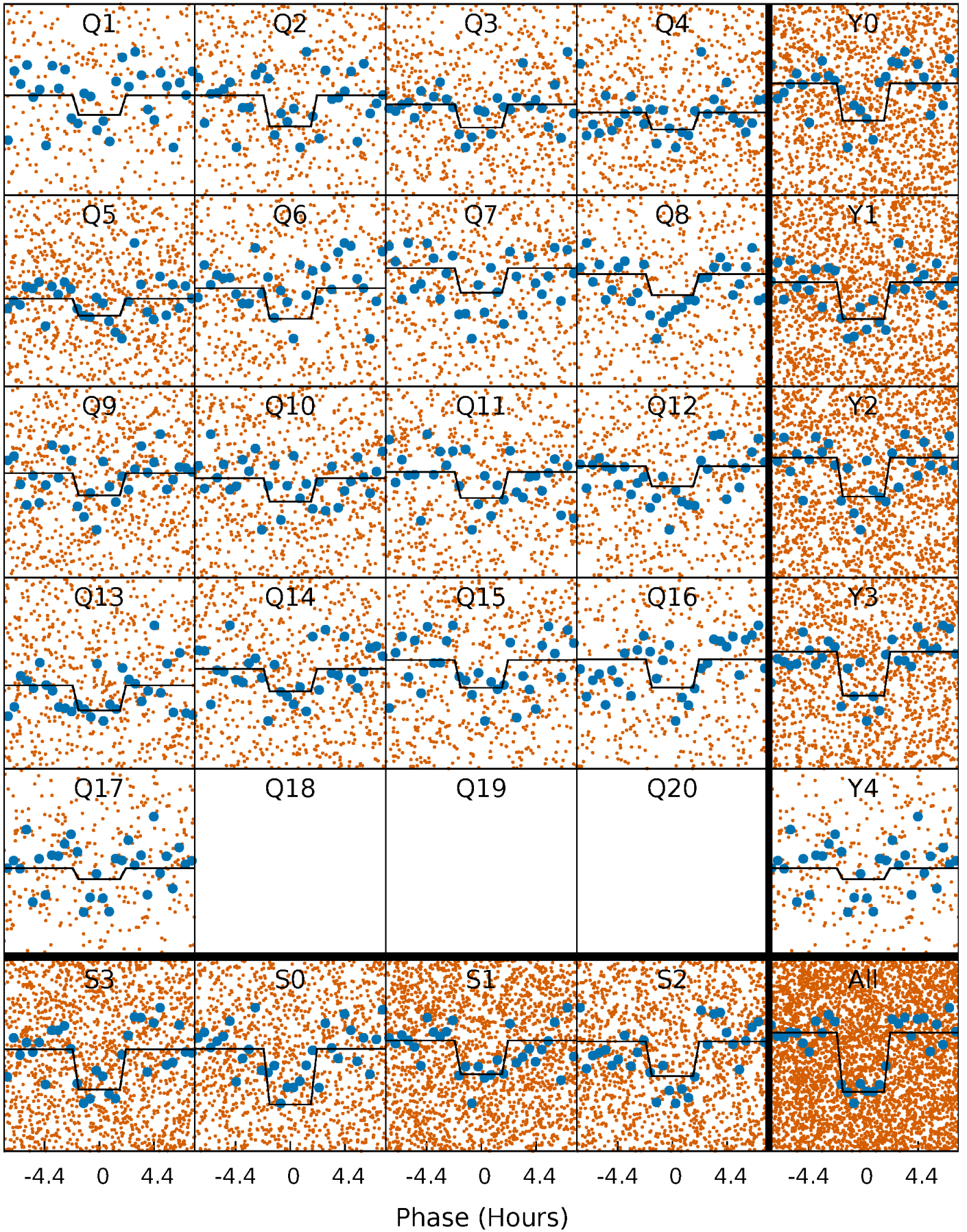
# DV Quarter-Phased Transit Curves

TCE 007046035-01 P= 2.271642 Days  $T_0=131.824683$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

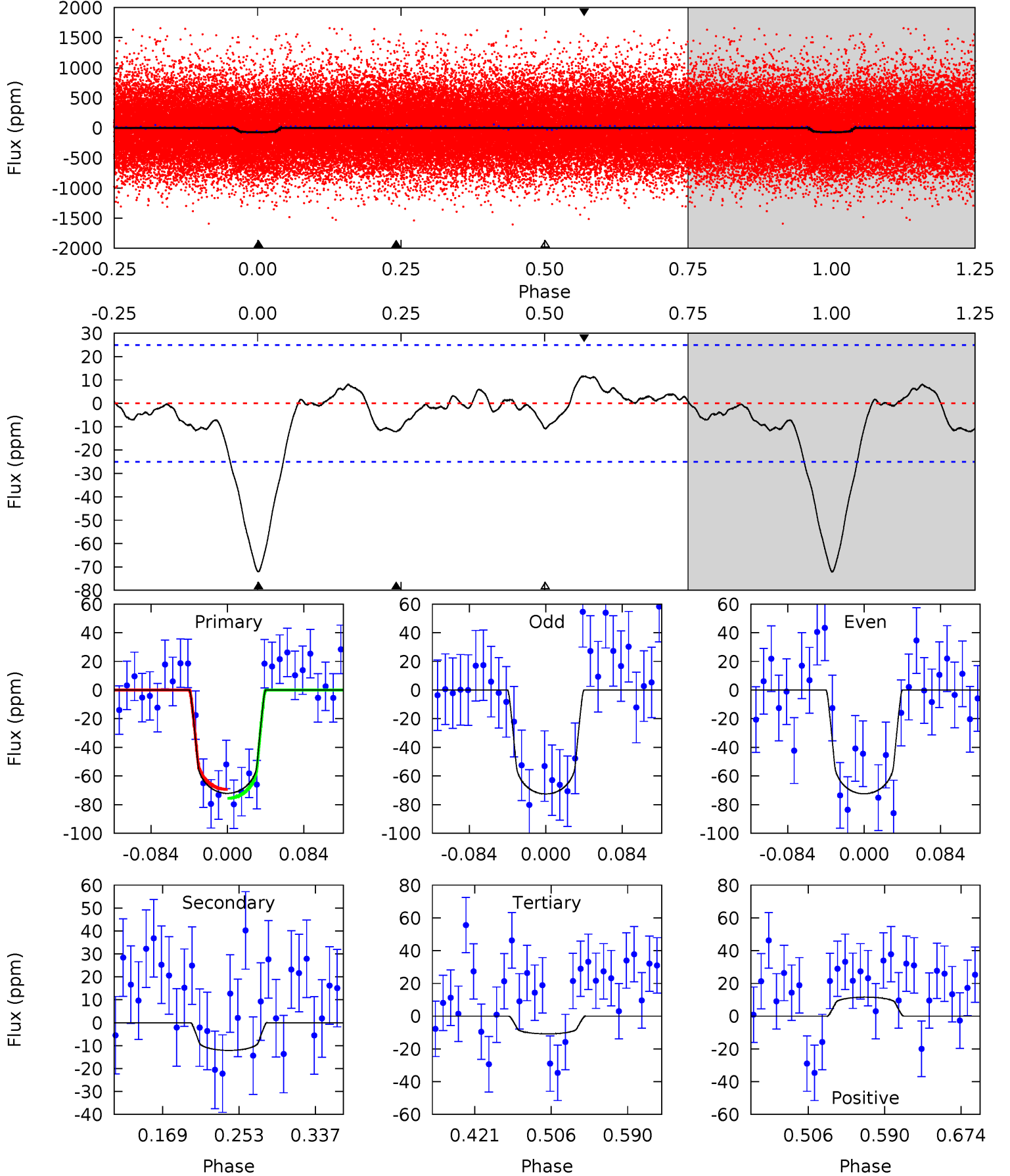
TCE 007046035-01 P= 2.271631 Days  $T_0=131.832119$  (BKJD)



# DV Model-Shift Uniqueness Test

007046035-01, P = 2.271642 Days, E = 129.553041 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	2.22	2.00	2.13	4.60	1.73	0.98	11.3	11.1	0.23	0.09	0.01	0.92	0.14	0.57

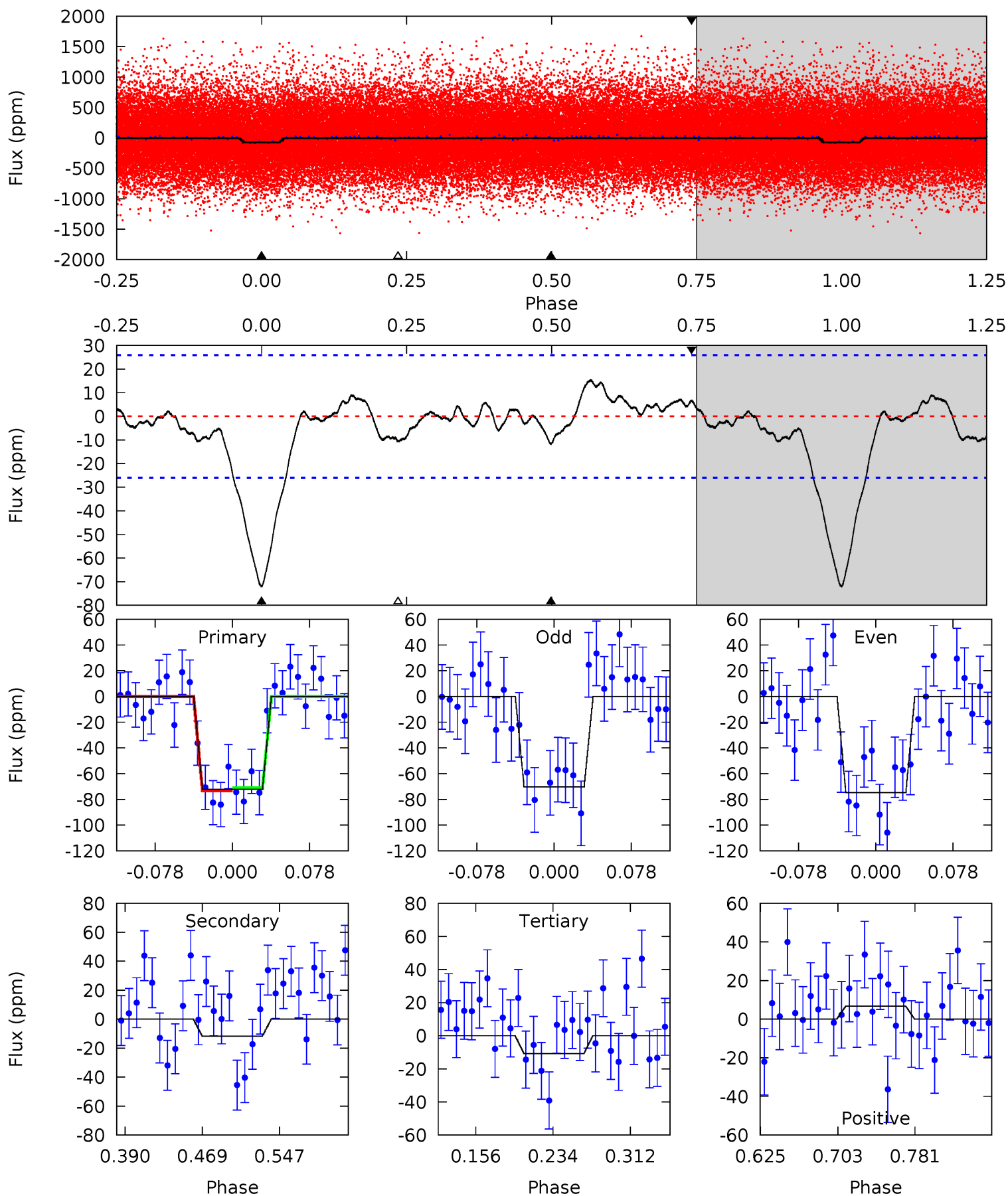




# Alt Model-Shift Uniqueness Test

007046035-01, P = 2.271631 Days, E = 129.560488 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	2.10	1.91	1.20	4.62	1.76	0.98	10.9	11.6	0.19	0.90	0.41	0.95	0.18	0.24





### Stellar Parameters For KIC 007046035

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6274^{+174}_{-240}$	$4.434^{+0.056}_{-0.224}$	$-0.100^{+0.250}_{-0.300}$	$1.062^{+0.361}_{-0.120}$	$1.115^{+0.156}_{-0.156}$	$1.313^{+0.388}_{-0.701}$
	+3%/-4%	+1%/-5%	+250%/-300%	+34%/-11%	+14%/-14%	+30%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007046035-01 / KOI 4424.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-12 \pm 5$	$1.14^{+0.60}_{-0.59}$	$2169^{+169}_{-113}$	$4049^{+1301}_{-733}$	$5.774^{+18.287}_{-3.728}$
Alt.	$-12 \pm 6$	$1.03^{+0.63}_{-0.55}$	$2169^{+174}_{-114}$	$4155^{+1653}_{-793}$	$6.897^{+25.850}_{-4.808}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming A=0.3)

$A_{obs}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

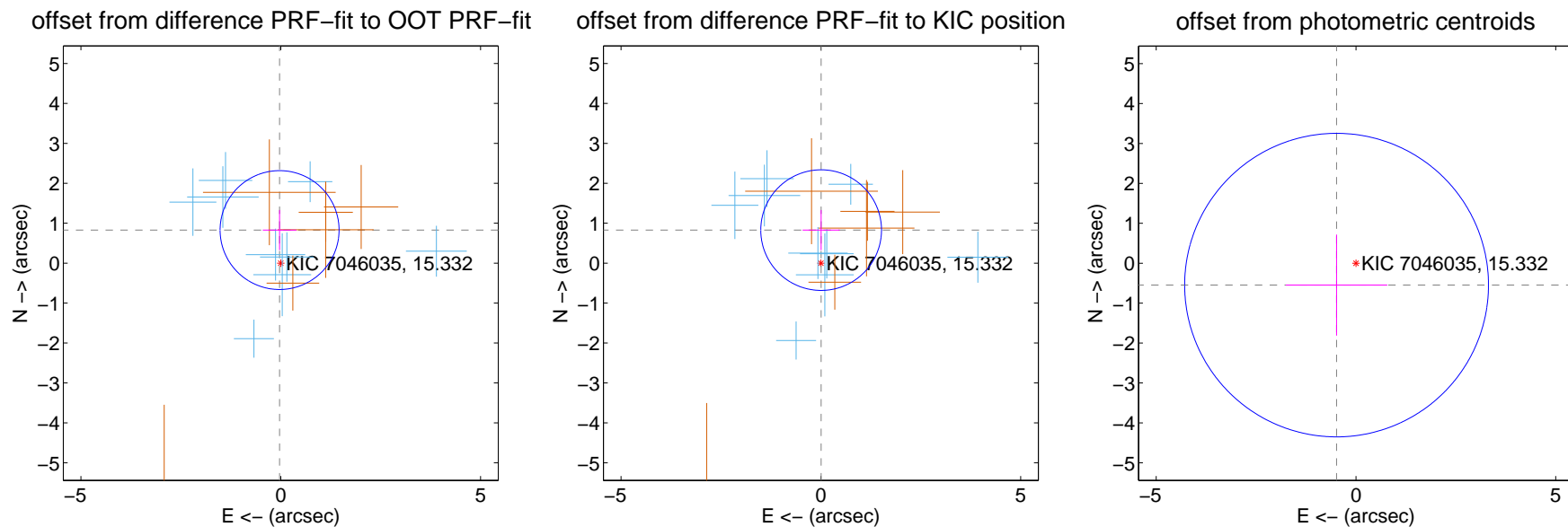
## DV Centroid Data

Supplemental centroid analysis for 007046035-01. Kepler magnitude: 15.33. Transit SNR 10.89

There are 9 quarters with good PRF difference image offsets

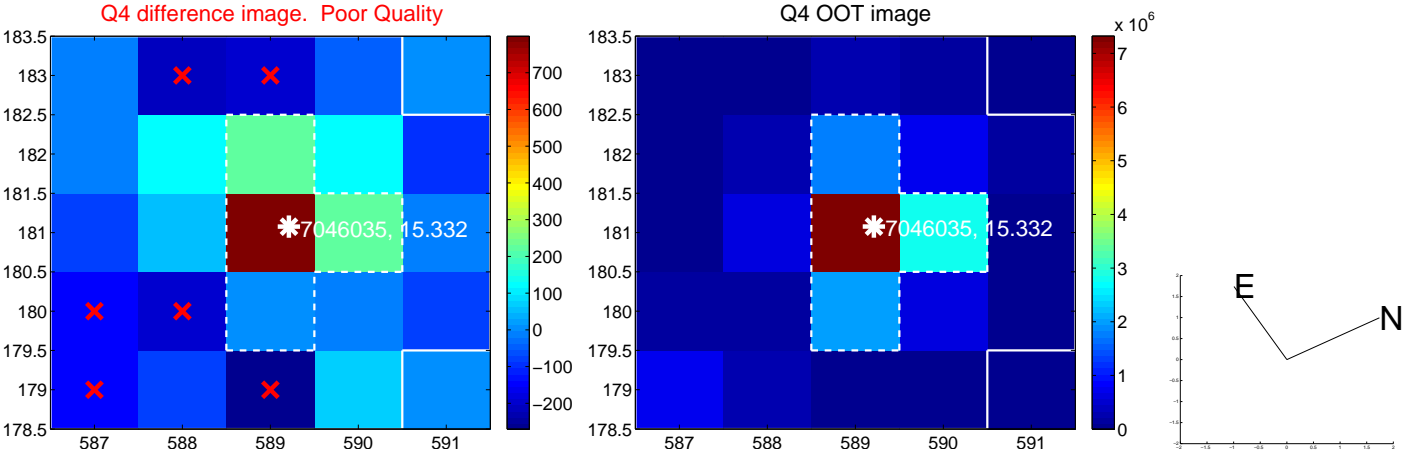
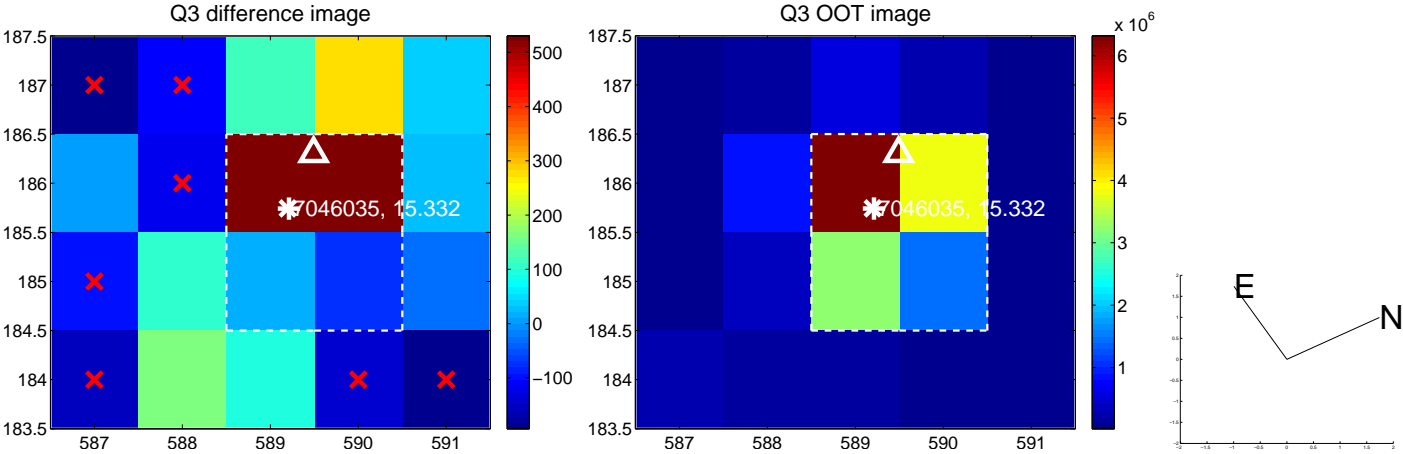
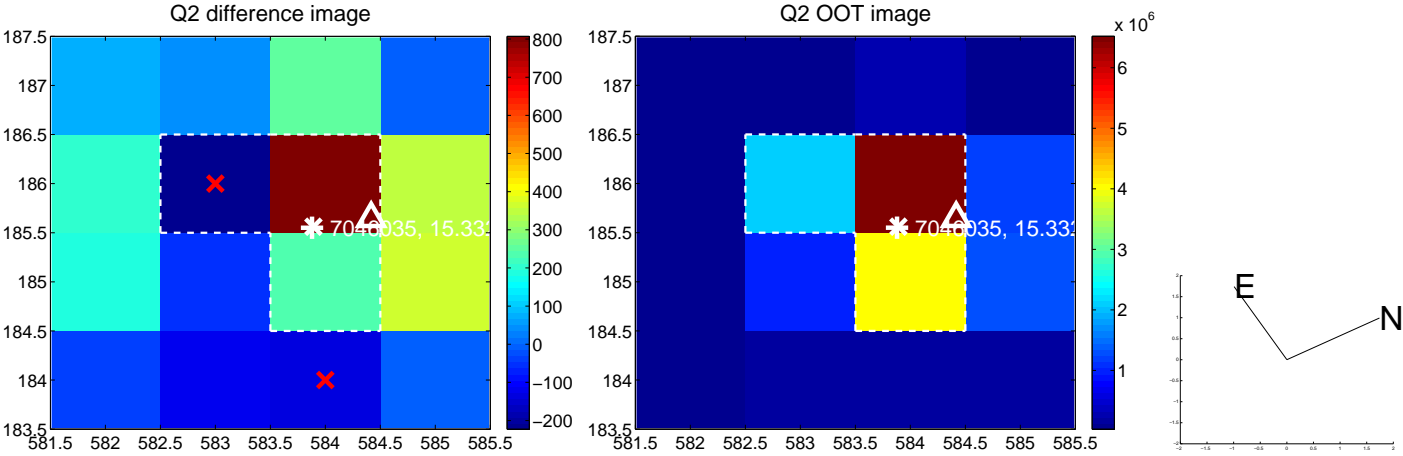
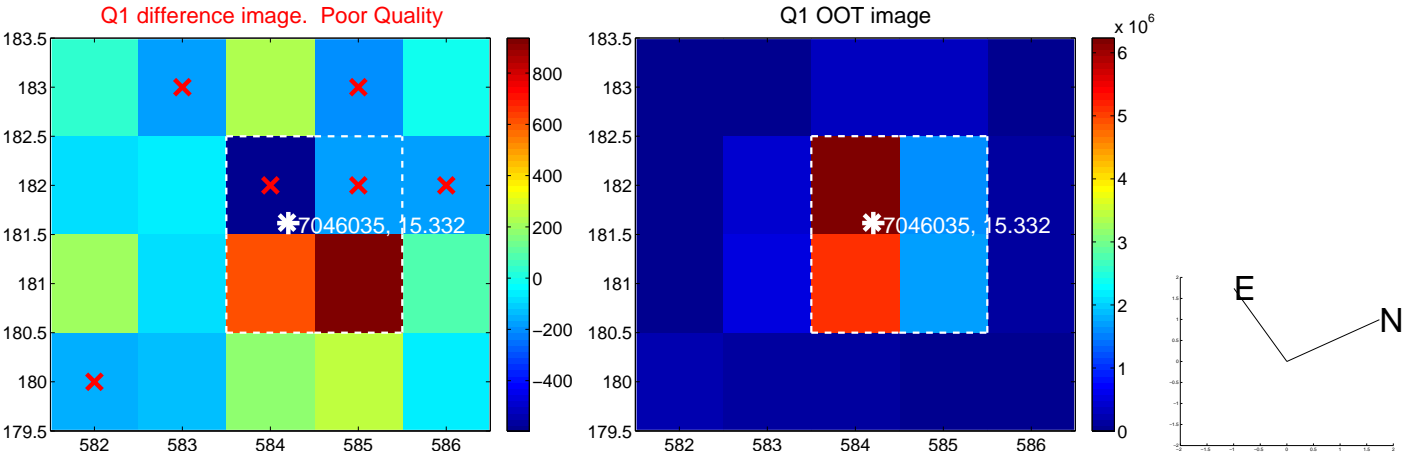
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.829 \pm 0.496$	1.67	$0.029 \pm 0.421$	$0.828 \pm 0.502$
PRF-fit source offset from KIC position	$0.827 \pm 0.503$	1.64	$-0.007 \pm 0.464$	$0.827 \pm 0.502$
photometric centroid source offset	$0.73 \pm 1.27$	0.58	$0.49 \pm 1.27$	$-0.55 \pm 1.26$

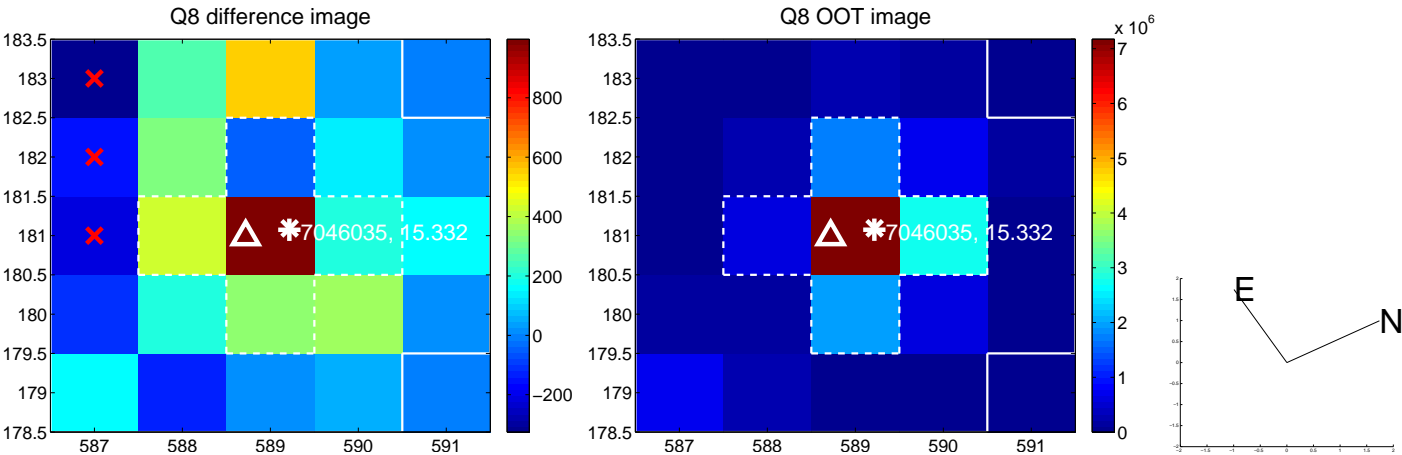
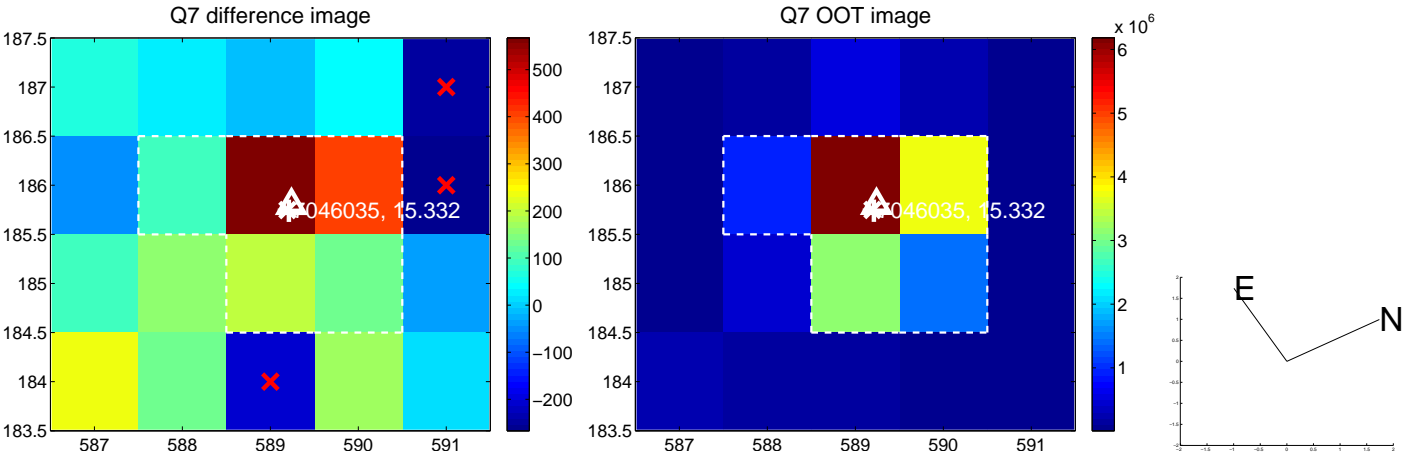
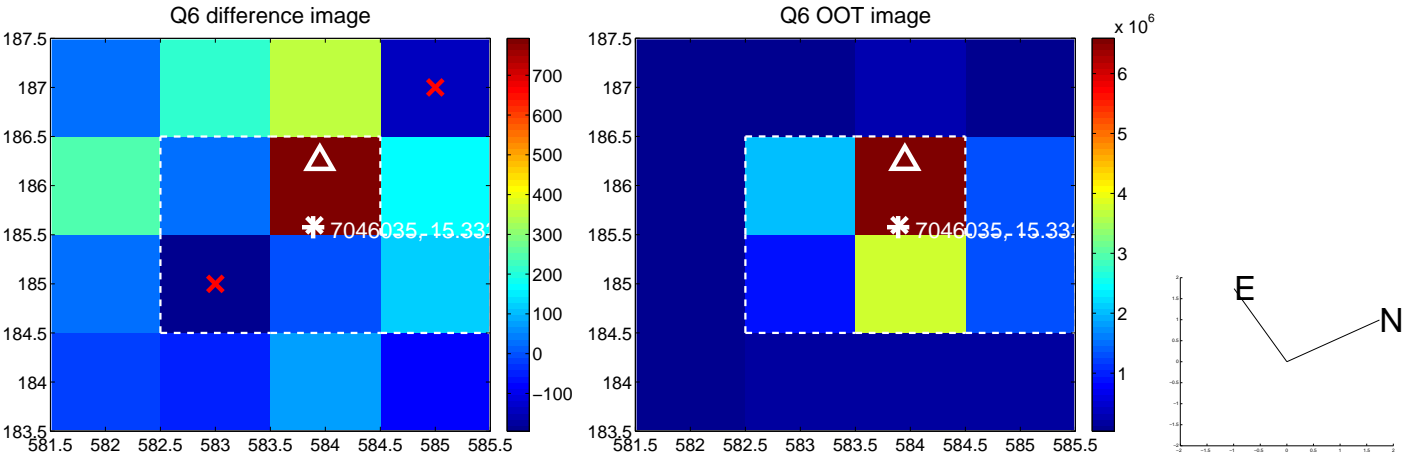
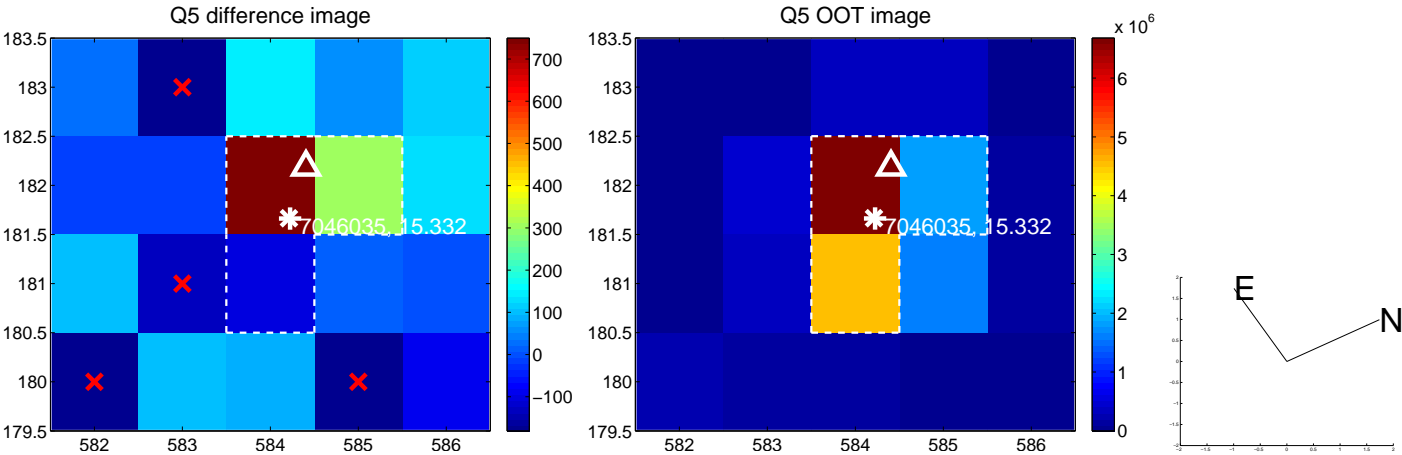


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

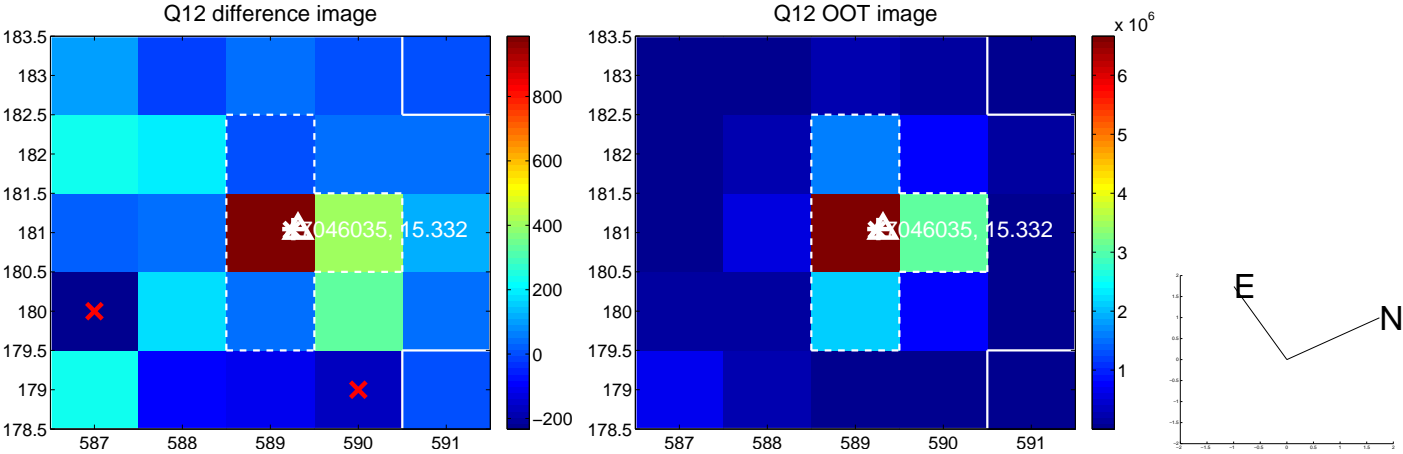
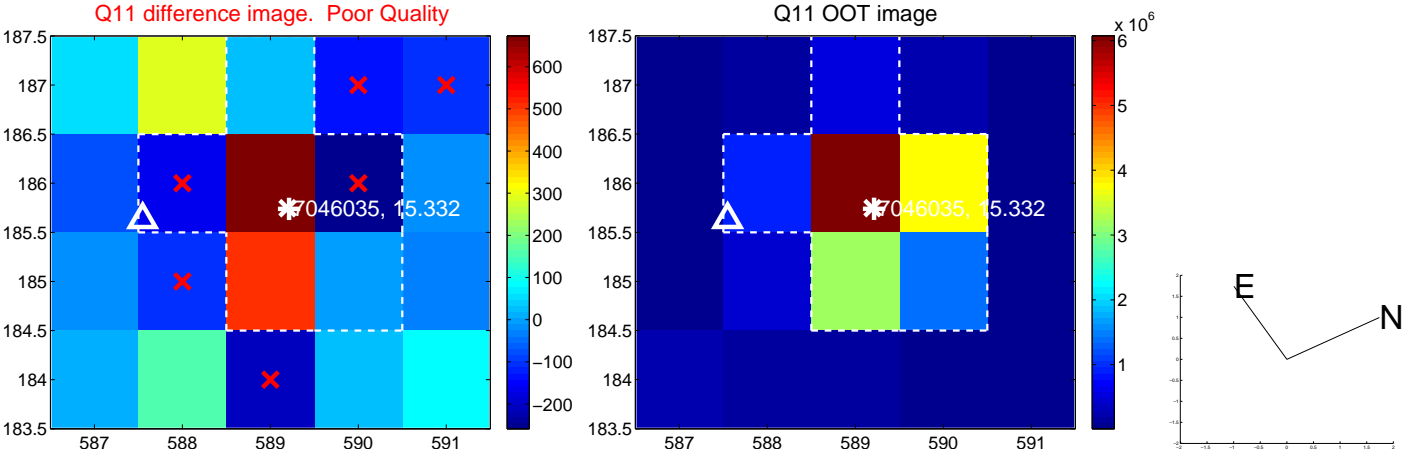
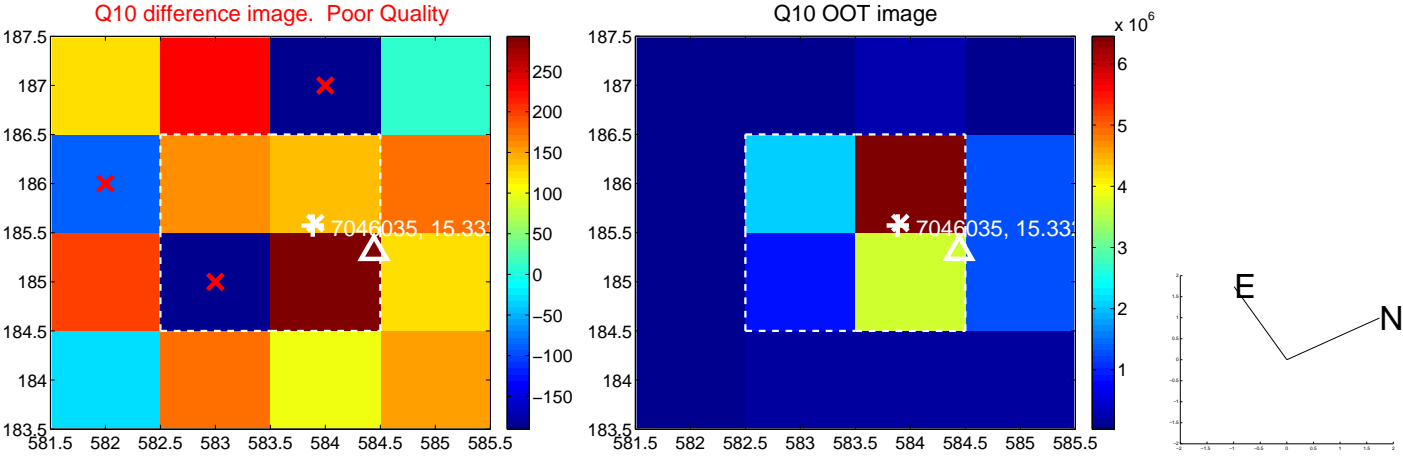
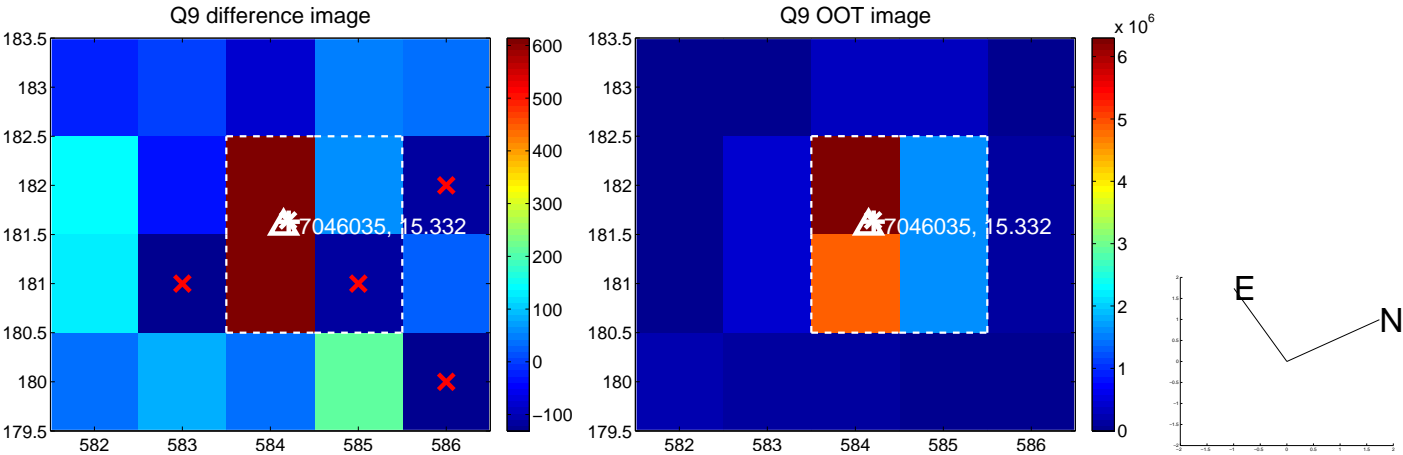


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

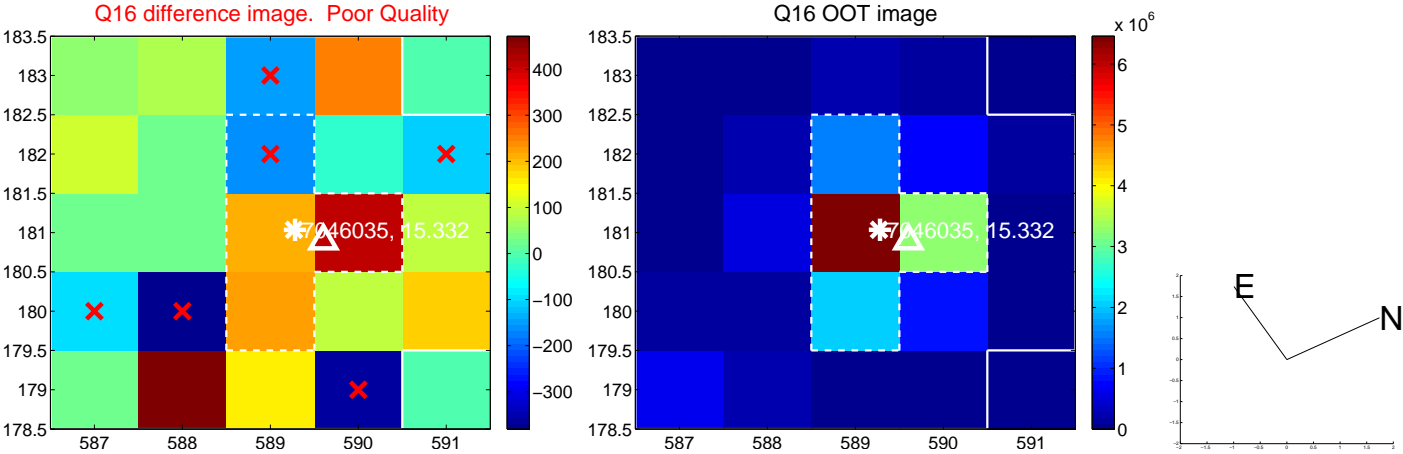
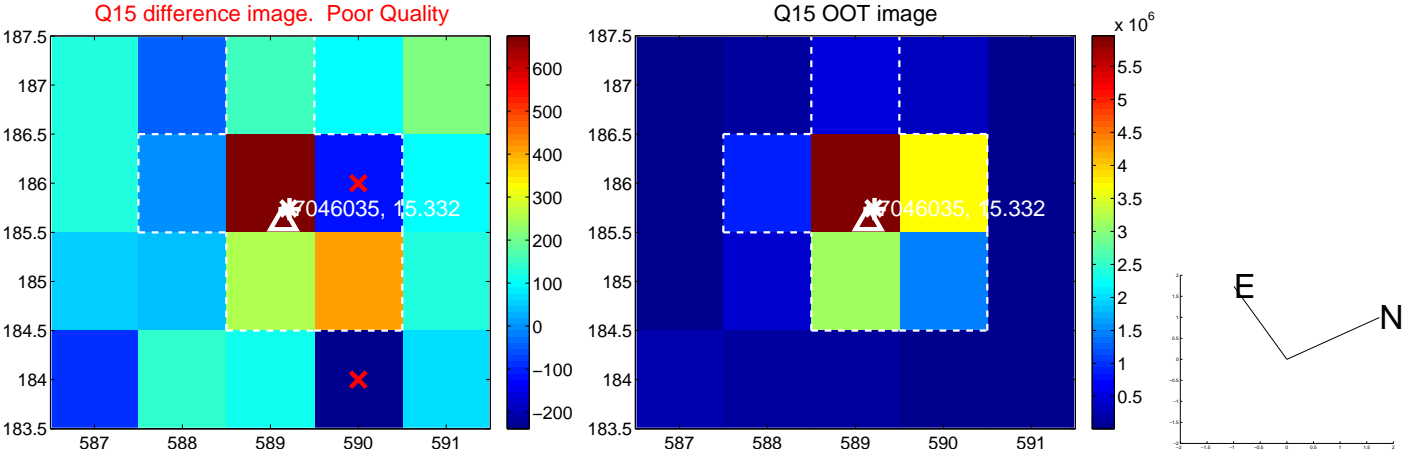
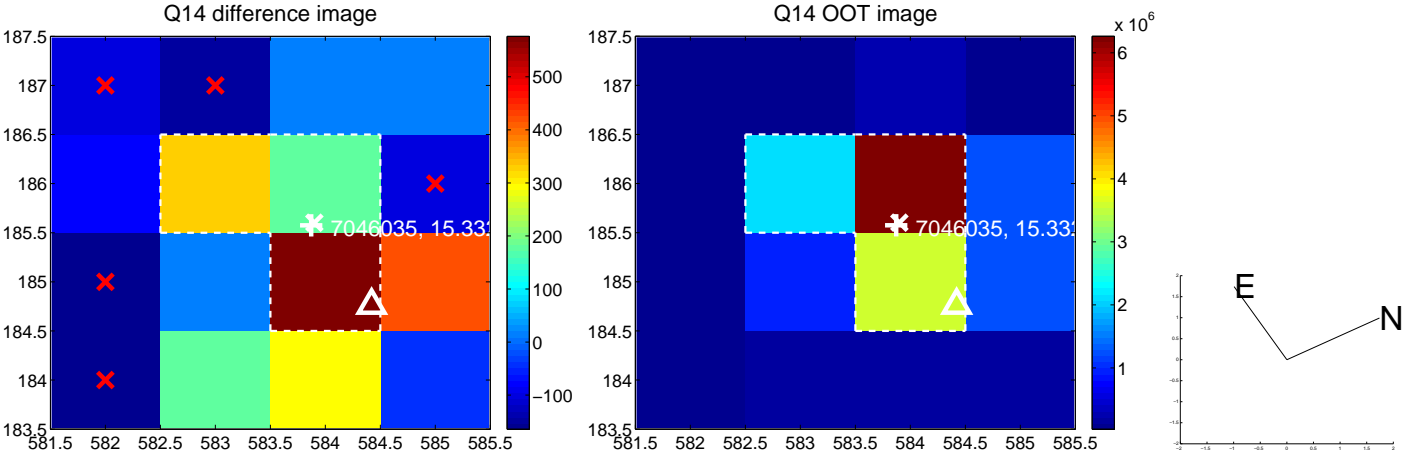
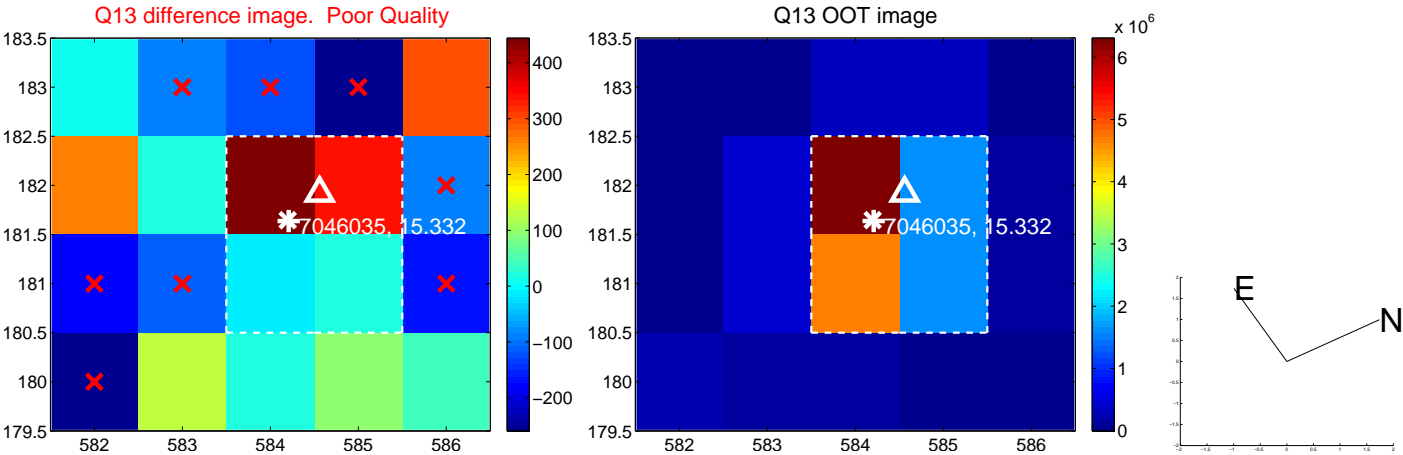




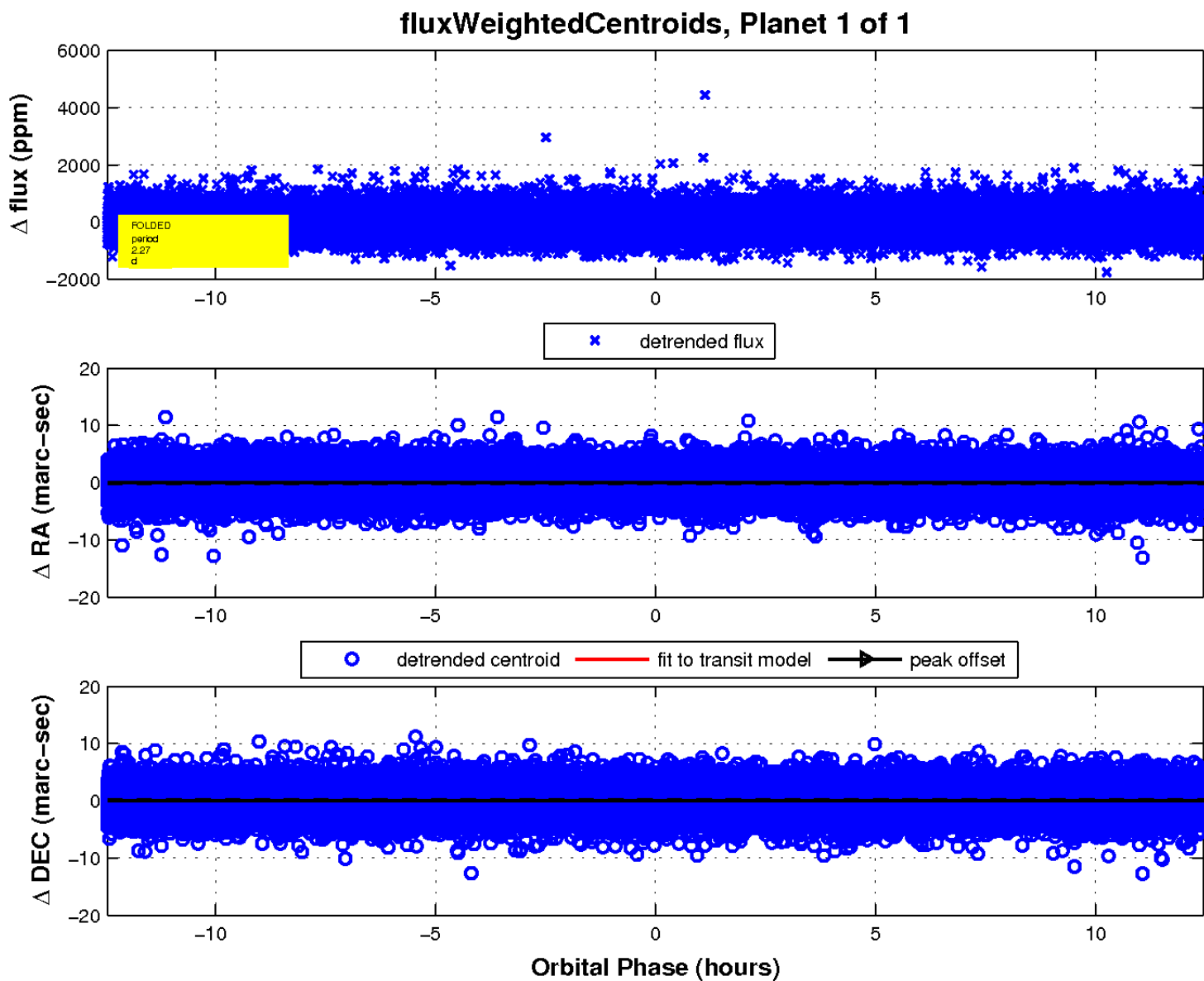
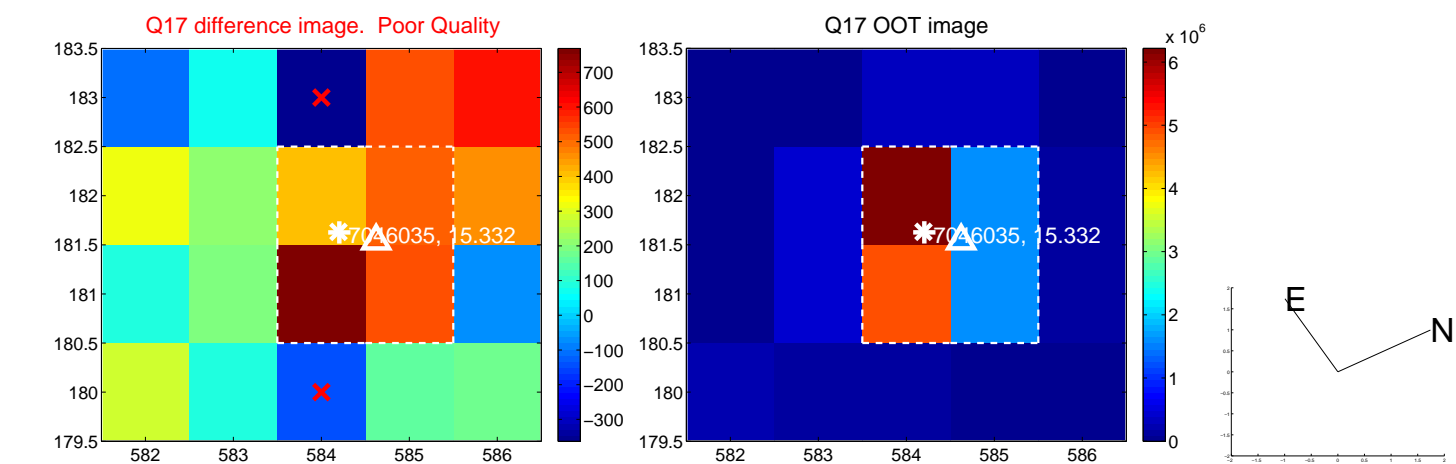
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination

